Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Recommendations Approved by World Radiocommunication Conference Advisory Committee	)	IB Docket No. 16-185

COMMENTS OF INMARSAT

Inmarsat, Inc. ("Inmarsat") submits these comments in response to the Public Notice issued by the International Bureau on April 26, 2018 in above captioned proceeding (the "PN").[1] The PN seeks comments on the draft recommendations provided by the World Radiocommunication Conference Advisory Committee ("WAC"), which are contained in Attachment A, and draft proposals provided by the National Telecommunication and Information Administration, which are contained in Attachment B. These issues will be considered by the 2019 World Radiocommunication Conference ("WRC-19").

Introduction

Inmarsat comments, herein, are limited to proposals addressing WRC-19 Agenda Item 9.1 Issue 9.1.1 contained in Attachment A of the PN. As stated in the PN, consensus was not reached on this agenda item and therefore two proposals, reflected as View A and View B, are included in the PN along with narrative justifications for each view. WRC-19 Agenda Item 9.1 Issue 9.1.1 is to 'study possible technical and operational measures to ensure coexistence and

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[1] *See International Bureau Seeks Comment on Recommendations Approved by World Radiocommunication Conference Advisory Committee*, Public Notice, IB Docket No. 16-185, DA 18-423 (April 26, 2018) ("*PN*").

compatibility between the terrestrial component of IMT (in the mobile service) and the satellite component of IMT (in the mobile service and the mobile-satellite service) in the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz where those frequency bands are shared by mobile service and the mobile-satellite service in different countries, in particular for the deployment of independent satellite and terrestrial components of IMT and to facilitate development of both the satellite and terrestrial components of IMT'.

In the ITU Radio Regulations the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz are allocated to the fixed, mobile, and mobile-satellite services (MSS) on a co-primary basis. The MSS allocation is in the Earth-to-space direction in the 1980-2010 MHz band and in the space-to-Earth direction in the 2170-2200 MHz band. Both the satellite and terrestrial components of IMT have been deployed and are being considered for further deployment within the 1 980-2 010 MHz and 2 170-2 200 MHz frequency bands. It is noted that the terrestrial IMT identification in the mobile service in the ITU Radio Regulations covers the broader frequency ranges 1885-2025 MHz and 2110-2200 MHz providing more flexibility for terrestrial IMT deployment.

There are several potential interference scenarios that occur when terrestrial IMT and satellite IMT systems are operating co frequency in adjacent geographic areas. Interference to the terrestrial IMT stations may occur in the 2170-2200 MHz from a transmitting MSS satellite and in the 1980-2010 MHz band from the transmitting MSS earth stations. Interference to the MSS system may occur from transmitting terrestrial IMT stations to MSS earth stations in the 2170-2200 MHz band and to MSS space stations in the 1980-2010 MHz band. The Radio Regulations include coordination procedures for each of these potential interference cases, except for the case of interference from terrestrial IMT to MSS satellites. For the case of

interference from terrestrial IMT stations to MSS receivers, ITU-R studies have shown that the aggregate interference from terrestrial IMT *user* terminals into MSS satellite receivers is at acceptable levels or can be addressed through mitigation techniques for most scenarios. However the studies have also shown that the aggregate interference from terrestrial IMT *base* stations into MSS satellite receivers is very significant, exceeding the MSS sharing criteria by over 50 dB in some cases. This is true for MSS satellites that operate in geostationary and non-geostationary orbits. View A advocates that this case, not covered by coordination procedures in the Radio Regulations, can be addressed on a bilateral basis, however this is an untenable approach. Since there are no coordination mechanisms in the Radio Regulations to address this case the only regulatory mechanism to engage in such bilateral coordination would be after the reception of actual interference and very likely disruption of MSS services to end users. Furthermore, there is also no obligation on the terrestrial IMT operator or the administration where the terrestrial IMT system operates to engage in coordination or to modify its operating parameters to eliminate the interference. Clearly this is not an acceptable approach. The View B approach avoids the likelihood of interference to MSS satellite receivers by limiting the transmitted power of IMT terrestrial stations in the 1980-2010 MHz to a level that has been shown to reduce the potential interference to the MSS satellites to acceptable levels or that can be addressed through mitigation techniques implemented in the MSS satellite system. The power level proposed would permit terrestrial mobile uplinks to be deployed in the band 1980-2010 MHz and hence would not be a significant constraint on deployment of new terrestrial mobile systems. View B also recognizes Radio Regulation 5.389B and exempts countries listed in that footnote from the proposed power restriction in the 1980-1990 MHz band.

Conclusion

The View A proponents propose no technical or operational constraints on IMT terrestrial stations to address the conclusion of ITU-R studies that have shown that significant interference can be caused to MSS satellites in the 1980-2010 MHz band from transmitting IMT terrestrial base station. View B proposes a straight forward method to allow IMT to operate in the band while at the same time avoiding this real and likely interference scenario. Inmarsat urges the Commission to adopt the View B proposal for the reasons provided herein.

Respectfully submitted,

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